Dow, Inc. is pleased to submit the following comments on the Treasury Department and Internal Revenue Service requests for comment on credits for clean hydrogen and clean fuel productions (Notice #2022-0058).

Dow has a global footprint of large-scale operations, including 106 manufacturing sites in 31 countries, and employs approximately 35,700 people. Dow's portfolio of plastics, industrial intermediates, coatings and silicones businesses delivers a broad range of differentiated science-based products and solutions for customers in high-growth market segments, such as mobility, packaging, infrastructure, and consumer care.

.01 Credit for Production of Clean Hydrogen

Response to .01(1)(a)

Calculation of lifecycle emissions should include sequestration within the boundary (i.e., CO2 sequestered does not count as emissions). The global warming potential (GWP) chosen to calculate emissions should be specified; recommended that GWP 100 be used as this is most adopted in industry.

Response to .01(1)(b)(iii)

Co-product allocation may be depended on hydrogen production route. For example, for hydrogen produced via electrolysis, mass allocation may not be appropriate, as the majority of the footprint would be associated with oxygen, and hydrogen production routes that are not technically 'green' (e.g., electrolysis driven by fossil generators) could qualify for the credit, which is not the intent of the incentive. System expansion may not make sense for green H2 production, as the oxygen produced would be considered a 'coproduct' and subtracting the coproduct footprint from the overall footprint would likely cause the resulting H2 footprint to be negative. However, system expansion may be appropriate for H2 produced as a byproduct of industrial processes.

Likely the most appropriate for the intent of the incentive are energy allocation or economic allocation methods.

Fundamentally, as the allocation method will vary the results significantly, a single allocation methodology should be determined for the purposes of the program.

Response to .01(1)(c)(ii)

Likely the most appropriate method for hydrogen produced as a byproduct of an industrial process, like petrochemical cracking, is the system expansion method. This is consistent with adjacent jurisdictions treatment of hydrogen, such as under the Alberta Technology Innovation and Emissions Reduction (TIER) framework. This would mean that hydrogen as a byproduct of petrochemical cracking would likely not qualify for this incentive, unless the facility was implementing emissions reduction technologies, like replacing natural gas with hydrogen fuel.

Fundamentally, as the allocation method will vary the results significantly, a single allocation methodology should be determined for the purposes of the program.

With respect to petrochemical cracking, typically, byproduct hydrogen from these processes is used today for onsite/offsite heat and power or as a feedstock for other chemical processes.

Response to .01(1)(d)

Under the production tax credit route, ability to claim a portion of the 45V credit based on the qualified clean hydrogen produced makes sense, however, with respect to opting for the investment tax credit route this

becomes more complicated. Unlike with investments in wind/solar, the emissions rate of hydrogen production may fluctuate over time. There needs to be clarity on how the ITC would treat these cases.

Response to .01(1)(e)(ii)
Invoices, power purchase agreements (PPAs), records of renewable energy certificate retirements should all be acceptable methods of proving the delivery of energy inputs.

If using renewable energy certificates, certificates should be acquired from the same ISO/market as the project itself.

With respect to granularity of time matching, it is recommended that this be consistent with how companies can claim use of renewable power to reduce their Scope 2 emissions under the GHG protocol. Today, this means annual matching. In the future, this may mean hourly matching.

Response to .01(4)(b)
Specific requirements for monitoring the lifecycle emissions should be avoided, but third-party verification should be required.

Response to .01(4)(f)
Yes, these should be considered. If using renewable energy certificates, certificates should be acquired from the same ISO/market as the project itself.

Response to .01(4)(g)
It is recommended that for the use of renewable energy certificates, the vintage of these certificates aligns with the year of production.

Response to .01(6)(b)(ii)
Consider the setup whereby hydrogen is produced via electrolysis, and the offsite source of electricity is the determining factor to the level of the investment tax credit a project is eligible to receive. If the project developer claims that a consistent source of renewable energy has been acquired for the lifetime of operation of the system to justify the highest credit amount, but this changes over the course of operation, how should this situation be handled? How does a developer prove that the source of power will be renewable, such that they can claim the highest % for the ITC?

Response to .01(6)(c)
Yes, there are certain project structures Dow is exploring whereby a single facility may have multiple streams – eg. carbon capture from a certain portion of the facility separate from the hydrogen production, another part of the facility being supplied with hydrogen eligible under the 45V credit, and should be able to claim both credits.

We appreciate your time and work on these matters. Please contact us if we can answer any questions or if we can provide any additional information.

Sincerely,

Daniel Womack
Senior Policy/Issues Director
Dow, Inc.